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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,039	11/21/2003	Marc A. Kaplan	YOR919992024US2	3159

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ALBANY, NY 12203

EXAMINER

PRIETO, BEATRIZ

ART UNIT	PAPER NUMBER
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2142

DATE MAILED: 11/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/719,039

Applicant(s)

KAPLAN ET AL.

Examiner

Prieto Beatriz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15-23, 30-34 and 45-49 is/are allowed.
- 6) ☒ Claim(s) 1-14, 24-29, 35-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/03</u> . | 6) <input type="checkbox"/> Other: _____  |

### ***DETAILED ACTION***

1. This communication is in response to Application No. 10/719,039 filed 11/21/03, which is a divisional of U.S. Patent Application Serial No. 09/322,521, filed May 28, 1999, now patent No. 6,681,220 issued 1/20/04. Claims 1-49 have been examined.

2. Claims 15-23, 30-34 and 45-49 are allowable.

### ***Claim Rejection***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-14, 24-29 and 35-44 are rejected under 35 U.S.C. 102(b) as being anticipated by Krishna (US 5,412,804).

Regarding claim 1, Krishna teaches a method including performing operations on data “message streams” in a “message” data processing system (col 1/lines 15-19 and col 5/lines 10-13), where the operations are performed arranged in a particular order (col 2/lines 9-29), including a sequence of operations between nodes (e.g. Fig. 9) in the data processing system (col 6/lines 30-38, 52-54), further including

converting the first operation sequence having a operation (called “select”) followed by a second operation (called “select”), into an equivalent operation sequence comprising a single operation (called “select”) (col 14/lines 32-58).

Regarding claim 2, the first operation sequence further comprises a first function (called “transform operation”) (col 1/lines 53-56 and col 12/lines 16-18), followed by a second transform operation (col 18/lines 16-21) and wherein the second equivalent operation sequence comprises a single transform operation (col 14/lines 32-58).

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Regarding claim 3, formulating alternative order of execution, i.e. "reorganizing" message processing operations in a message processing system comprising using the arranging method of claim 1 (col 4/lines 4-65 and 2/lines 36-51).

Regarding claim 4, wherein said reorganizing is facilitated by an automated processing system (col 4/lines 57-65).

Regarding claim 5, a method for arranging an information flow graph descriptive of message processing operations for a method processing system, comprising using the arranging method of claim 1 on said information flow query graph (col 6/lines 19-38, 52-54).

Regarding claim 6, wherein said method for arranging the information flow graph is performed on an automated processing system and wherein the information flow graph comprises "information", i.e. instructions or a program tangibly stored on media in said automated processing system (col 4/lines 57-65).

Regarding claim 7, reducing a number of calculations required to determined the second equivalent operation sequence by storing results of any common sub expressions thereof and using said stored instead of recalculating the common sub expressions (col 2/lines 36-45).

Regarding claim 8, including limitation discussed on claim 1, and further a first operation sequence having a first multiple predicates including transform operations, i.e. a transform operation followed by a second transform operation (col 18/lines 15-21), the method comprising: converting the first operation sequence into a second equivalent operation sequence comprising a single transform operation (col 14/lines 32-58).

Regarding claim 9, this claim is substantially the same as claim 1, same rationale of rejection is applicable.

Regarding claims 10-14, these claims are substantially the same as claims 3-7, respectively, same rationale of rejection is applicable.

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Regarding claims 24-26, these claims correspond to the system claims comprising the means associated to method claims 1-2 and 7, discussed above, same rationale of rejection is applicable.

Regarding claims 27-29, these claims correspond to the system claims comprising the means associated to method claims 8-9 and 14, discussed above, same rationale of rejection is applicable.

Regarding claim 35, comprises limitation substantially the same a claim 1, same rationale of rejection is applied thereon; further comprising a first sequence having a aggregated operation followed by a select operation (col 2/lines 19-45), converting the first operation sequence into a second equivalent operation comprising a select operation followed by a transform operation (col 14/lines 32-58).

Regarding claims 36-37, joining multiple select predicated into an equivalent select operation and joining multiple aggregated function into an equivalent aggregated function (col 17/lines 25-40, col 18/lines 15-26).

Regarding claim 38, this claim correspond to the article of manufacture comprising a computer readable usable medium having computer readable program code means embodied therein for performing the method claim 7, discussed above, same rationale of rejection is applicable.

Regarding claims 39-41, these claims correspond to the article of manufacture comprising a computer readable usable medium having computer readable program code means embodied therein for performing the method claims 1-2 and 7, discussed above, same rationale of rejection is applicable.

Regarding claims 42-44, correspond to the article of manufacture comprising a computer readable usable medium having computer readable program code means embodied therein for performing the claims 35-38, discussed above, same rationale of rejection is applicable.

**Citation of Pertinent Art:**

The following prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Copies of Non-Patent Literature documents cited will be provided as set forth in MPEP§ 707.05(a):

(US 5,367,675) CHENG et. al. teach re-organizing message processing operations in a message processing system; converting the first operation sequence into a second equivalent operation sequence; and reducing a number of calculations required to determined the second equivalent operation sequence by storing results of any common query block "sub expressions" thereof and using said stored instead of recalculating the common sub expressions.

(US 5,659,725) LEVY et. al. teach reducing a number of calculations, by minimizing the number or constraints, i.e. predicates required to determined the second equivalent operation sequence by storing results of any common sub expressions thereof and using said stored instead of recalculating the common sub expressions; pushing predicates down the query graph, into query blocks that are computed earlier during evaluation; and further teaching moving predicates into other nodes of the query graph.

Access Path Selection in a Relational Database Management System, Selinger et. al., IBM Research Div. San Jose, California, ACM 0-8791-001-X/79/0500-023, 1979, pages 23-34.

Selinger et. al. teaches converting a first operation sequence comprising many query blocks each SELECT statements, wherein a single SQL statement is equivalent to the first operation sequence.

Interchange GROUPBY and Join Distributed Query Processing, Weipeng Paul Yan, pages 823-831

Yan teaches aggregation functions (COUNT, MIN, MAX, SUM, AVG) in a SELECT clause may be combined or expressed as in conjunctive form forming an equivalent query expression.

Optimization of nested SQL queries revisited, Ganski & Wong, International Conference on Management of Data, Proceedings of the 1987, ACM SIGMOD, ISSN: 0163-5808, pages 23-33.

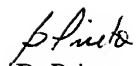
Ganski et. al. teach a first operation sequence comprising a plurality of predicated including SELECT operations and Aggregated functions, transforming the first operation sequence to convert the first operation sequence into a single SELECT clause of the outermost query block by combining the

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FROM clauses of all query blocks into one FROM clause, and AND all WHERE clauses of all query blocks.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Beatriz Prieto whose telephone number is (571) 272-3902. The Examiner can normally be reached on Monday-Friday from 6:30 to 4:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's Supervisor, Jack B. Harvey can be reached on (571) 272-3896. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-6606. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3800/4700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system, status information for published application may be obtained from either Private or Public PAIR, for unpublished application Private PAIR only (see <http://pair-direct.uspto.gov> or the Electronic Business Center at 866-217-9197 (toll-free)).



B. Prieto  
Patent Examiner  
November 15, 2004